

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:  
John Stewart Young et al.

Application Serial No. 10/092,961

Filed March 4, 2002

DEVICES AND METHODS FOR SPINAL )  
COMPRESSION AND DISTRACTION )

) Before the Examiner:  
) Anu Ramana  
)

) Group Art Unit 3732  
)

) Atty Docket No.: 4002-2665/PC614.00  
)

RECEIVED  
OCT 01 2004  
TECHNOLOGY CENTER R3700

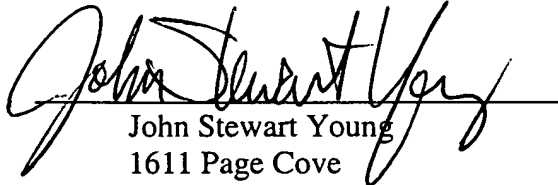
**AFFIDAVIT OF PRIOR INVENTION IN THE UNITED STATES TO  
OVERCOME CITED PATENT OR PUBLICATION (37 C.F.R. § 1.131)**

I, John Stewart Young, hereby declare as follows:

1. I am the sole inventor of the subject matter disclosed and claimed in the above-identified patent application (hereafter the "Invention").
2. During all periods discussed herein, I was employed by Medtronic Sofamor Danek, Inc., a Tennessee corporation having offices at 1800 Pyramid Place, Memphis, Tennessee, 38132.
3. This Affidavit is being submitted to establish completion of the Invention in the United States prior to September 14, 2001.
4. All acts and events described, identified, or referred to herein occurred in the United States.
5. Prior to September 14, 2001, the Invention was successfully reduced to practice.
6. To evidence reduction to practice of the Invention, attached hereto as Exhibit A is a document entitled "Invention Disclosure" for Medtronic Sofamor Danek which indicates completion of a construct/prototype of the invention prior to September 14, 2001 (actual dates

blacked out.) The Invention Disclosure includes drawings of the construct/prototype. The dates of the drawings are prior to September 14, 2001 (actual dates blacked out.) Also blacked out from the drawings are notes and dimensions pertaining to the device shown therein.

WITNESS Affiant's hand this 23<sup>rd</sup> day of September, 2004.

  
John Stewart Young  
1611 Page Cove  
Memphis, TN 38119  
Citizenship: USA

STATE OF TENNESSEE                     )  
                                                          ): ss  
COUNTY OF SHELBY                     )

Before me, a Notary Public, in and for said County and State, personally appeared John Stewart Young, who, being first duly sworn upon his oath, acknowledged the execution of the foregoing "Affidavit" as his voluntary act and deed.

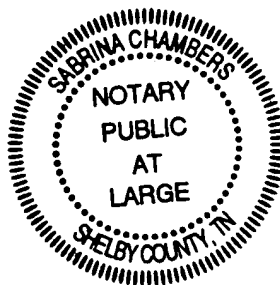
WITNESS my hand and Notarial Seal this 23<sup>rd</sup> day of September, 2004.

  
Notary Public

Printed: Sabrina Chambers

Resident of Fayette County

My Commission Expires:  
**MY COMMISSION EXPIRES:**  
**October 6, 2007**





00142

Title of Invention Locking Compressor/Distractor			Project No. or Name 8052-9436/8052-9455	
Inventor(s) John Stewart Young			Eng. Notebook No. & Pages	
Date Conceived [REDACTED]	Date Constructed [REDACTED]	Date First Tested [REDACTED]	Date Disclosed Outside Company [REDACTED]	
<p>1. Describe what is new or different about the subject matter of this invention:</p> <p>This patent covers a locking mechanism on a compressor or distractor, or any rack and pinion device. In the iteration shown it is included on a rack and pinion distractor, intended for thoracoscopic use. As shown it will allow movement of the rack in either direction only when the release is applied (when the ball on top of the assembly is grabbed), but it will allow distraction while the lock is applied. Using other tooth configurations you can limit this movement to compression (by reversing the teeth from those shown on 848-955-05) or stop movement altogether when the lock is applied (by duplicating the rack surface on the lock mechanism).</p> <p>2. Advantages of this invention over what was done before and problems solved:</p> <p>Current Thoracoscopic compressors do not have a lock mechanism, so force must be maintained by the user during use to maintain the compression or distraction, thus occupying space in the wound or taking up a portal. This device allows the user to leave it alone once the appropriate force is applied.</p> <p>3. Describe your idea on attached sheets, providing whatever drawings or other sketches are necessary to completely describe the idea. Copies of engineering notebook sheets may be provided. All addendum sheets must be signed, witnessed and dated.</p>				
Inventor (Print/Type) <u>John Stewart Young</u> Address: <u>1611 PAGE LOVE</u> <u>MEMPHIS TN 38119</u> Citizenship: <u>US</u> Signature <u>John Stewart Young</u> [REDACTED] Date		Witness (Print/Type) <u>Joe A. Curtis</u> Read, Witnessed and Understood Signature <u>Joe A. Curtis</u> [REDACTED] Date		
Inventor Address: Citizenship: Signature Date		Witness (Print/Type) <u>JEFFREY WARREN BEALE</u> Read, Witnessed and Understood Signature <u>Jeffrey Warren Beale</u> [REDACTED] Date		
Inventor Address: Citizenship: Signature Date		Signature Approval President, Technology Development		
Inventor Address: Citizenship: Signature Date		Signature Approval President, Thoracolumbar [REDACTED]		

INVENTION DISCLOSURE



**Medtronic**

**SOFAMOR DANEK**

Disclosure No. 00142

Project No. 8052-9436/8052-9455

Sheet 2 of 14

List patents, publications and products which you are aware of and which preceded your invention.

John Dietz, MD has a patent on a small rack and pinion compressor.

Inventor *J. Stewart Young* [Redacted] Date

Inventor \_\_\_\_\_ Date

Inventor \_\_\_\_\_ Date

*Joe A. Custer* [Redacted]  
Read, Witnessed and Understood Date

*Jeffrey Warren Burke* [Redacted]  
Read, Witnessed and Understood Date

[Redacted]

INVENTION DISCLOSURE



**Medtronic**

**SOFAMOR DANEK**

Disclosure No. 00142

Project No. 8052-9436/8052-9455

Sheet 3 of 14

Drawings and Description of Idea

Only a drawings of a distractor are attached to this patent, but as per the earlier description this mechanism can be applied to a compressor or distractor, or to a combination that prevents motion in either direction when the lock is applied. This distractor also shows the lock release as built into the mount for a distractor holder, which is a modified pituitary rongeur with a collet mechanism in the working end that allows the user to hold and maneuver the distractor while keeping the lock disengaged. This is only a feature that should be considered as one iteration of such a mechanism.

I am including a rendering showing a distractor attached to one M8MAS and one CDH ECLIPSE bone screw, plus production prints for the distractor.

Inventor

*J. Stewart Gray*

Date

Read, Witnessed and Understood

*Joe A. Carter*

Date

Inventor

Date

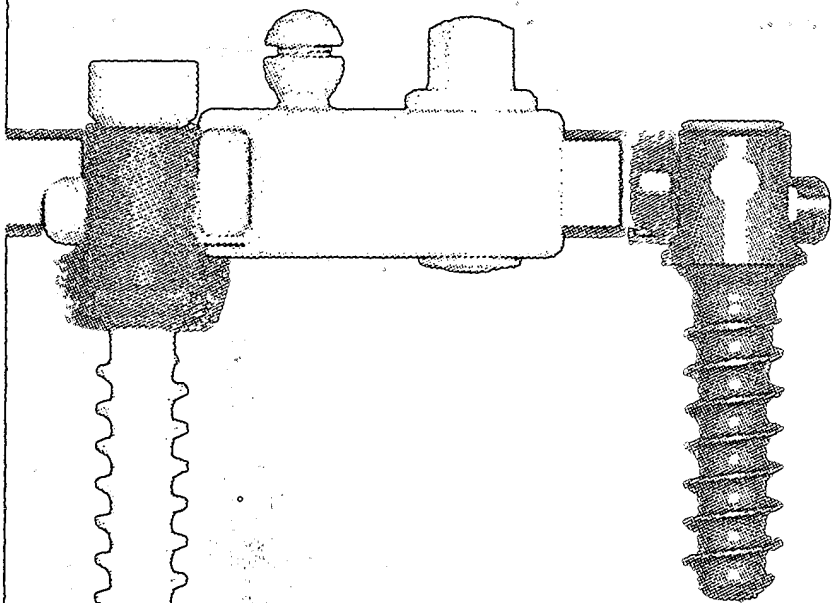
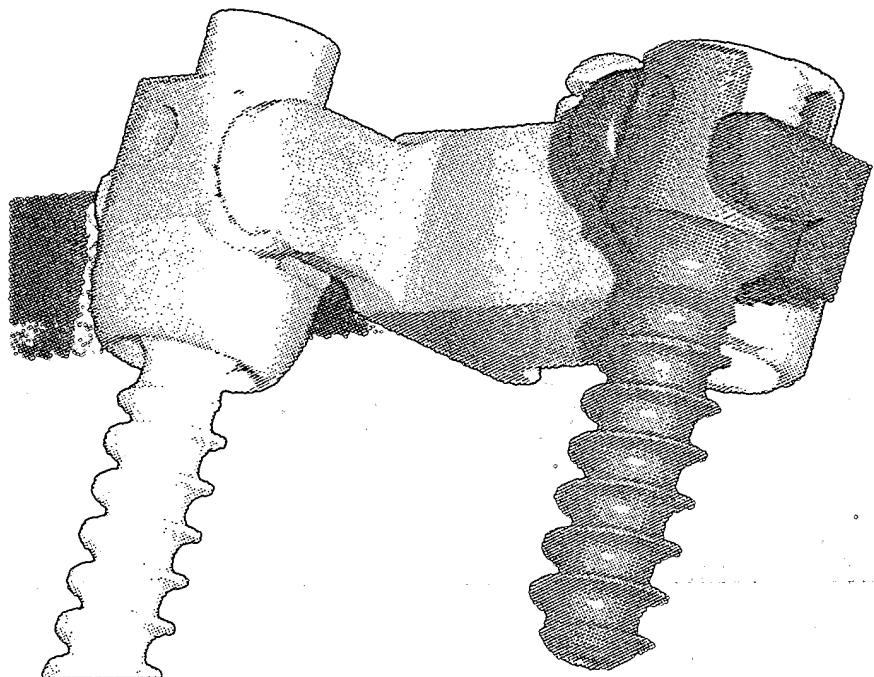
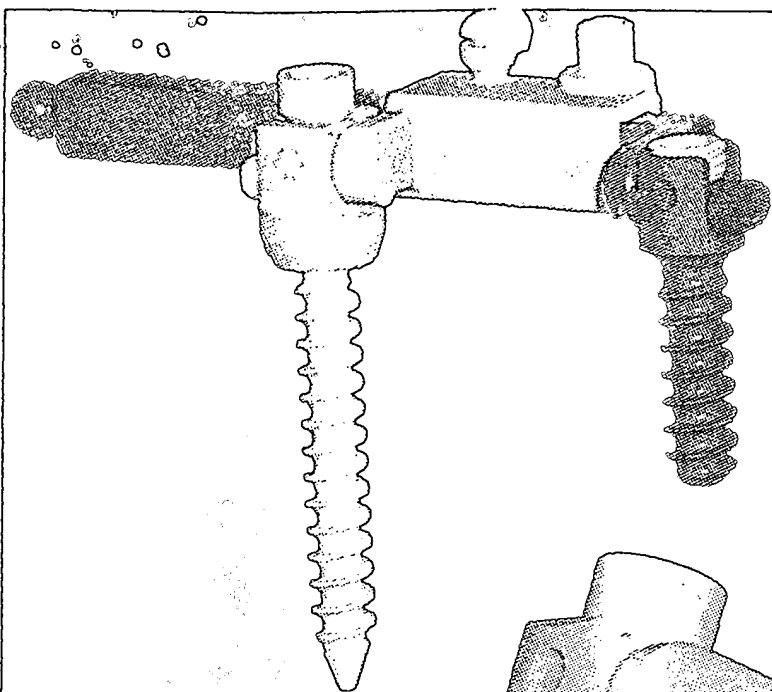
Read, Witnessed and Understood

*Jeffery Warren Beale*

Date

Inventor

Date

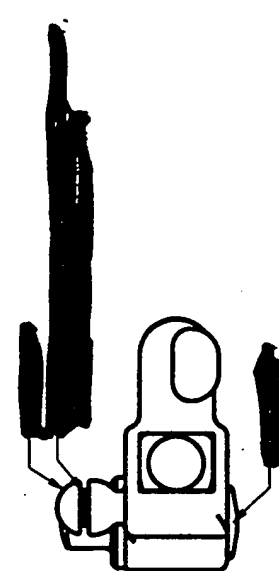
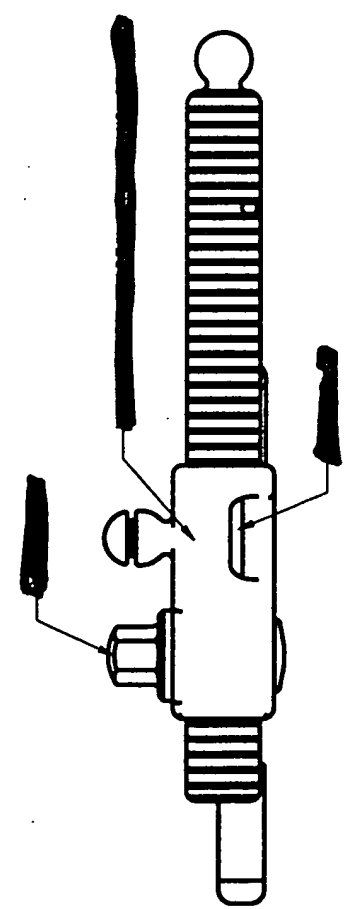
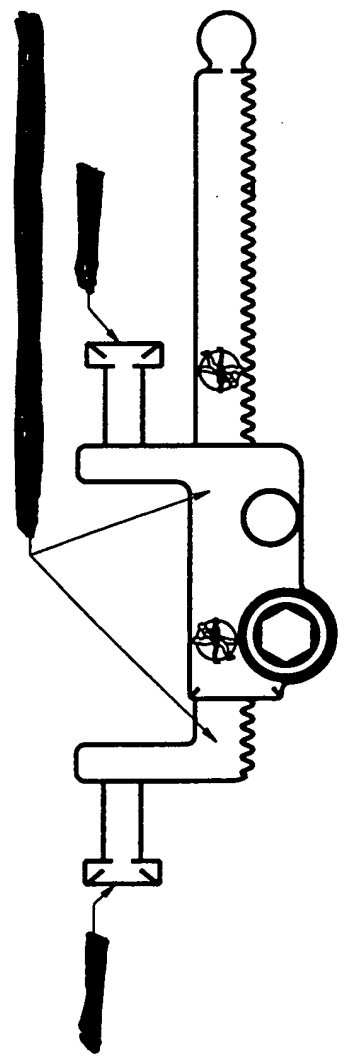


00142  
PS-S 814

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE		JSY

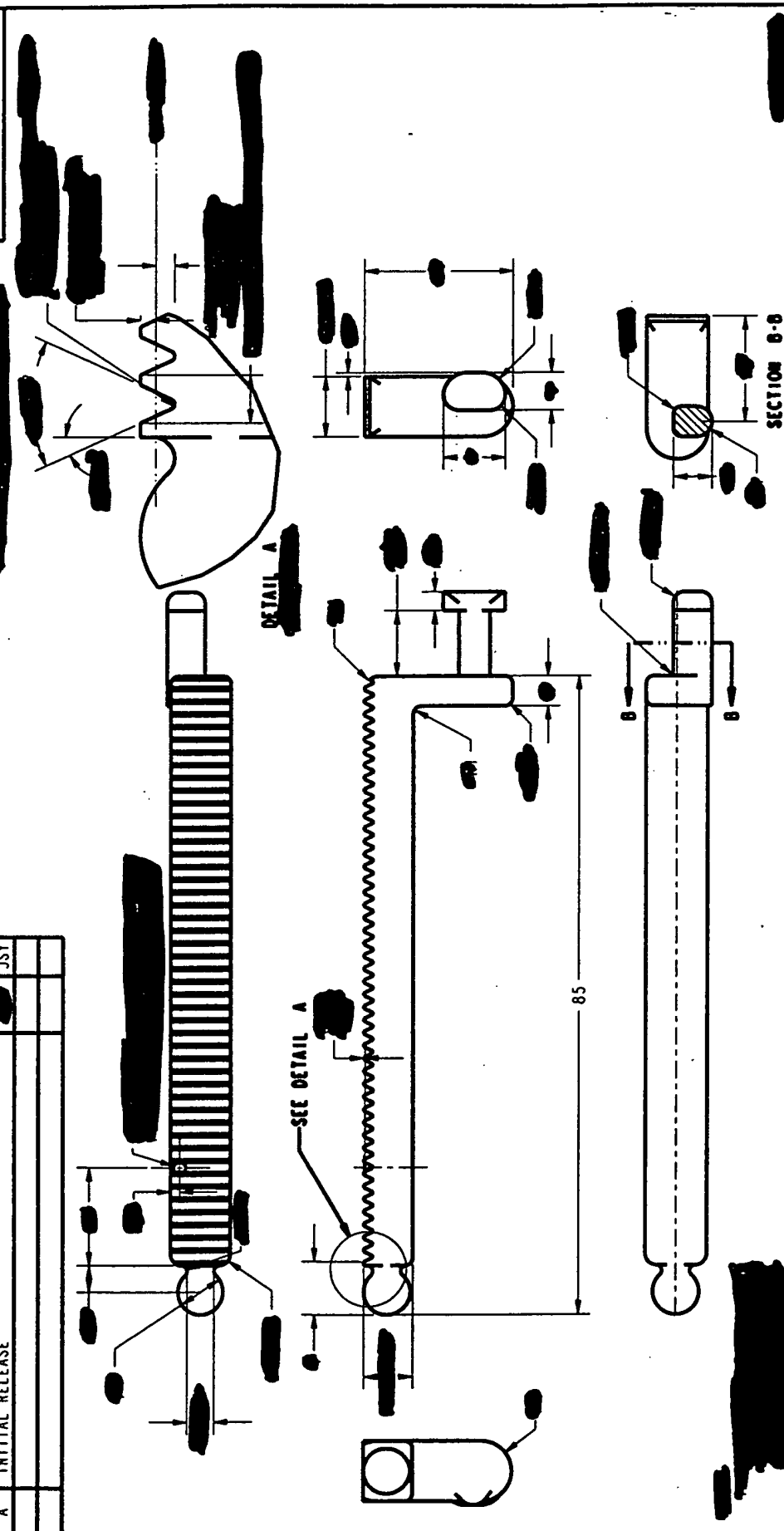
848-955



<b>Medtronic</b> <b>SOFAMOR DANEK</b> MEDTRONIC SOFAMOR DANEK MANUFACTURING 1000 PLYMOUTH PLACE, RUMBLETS IN, MINN. 55425 U.S.A. TEL. 612-336-3333 FAX 612-336-3444		CD HORIZON ECLIPSE RACK-AND-PINION DISTRACTOR SEE INDIVIDUAL COMP. MATERIAL LASER ETCH AS SHOWN SCALE NTS 848-955
INFORMATION CONTAINED IN THIS DOCUMENT IS UNCLASSIFIED BY MEDTRONIC SOFAMOR DANEK RELEASE OTHER THAN TO PERSONS FOR WHOM IT IS REQUIRED FOR PERFORMANCE OF THEIR WORK FOR MEDTRONIC SOFAMOR DANEK IS NOT AUTHORIZED.	TOLERANCE UNLESS SPECIFIED UNLESS NOTED ±0.1 ANGLES 1. DO NOT SCALE DRAWING 2. REMOVE ALL SPURS AND SHARP EDGES 0.3 MAX. 3. 0.007 FINISH UNLESS NOTED	THIRD ANGLE PROJECTION CONTENTS OF THIS DRAWING ARE BASED ON THE MEDTRONIC SOFAMOR DANEK INTERPRETATION OF THE TITL. 50-104

J.S. Young  
Joe A. Dutton  
John W. Buel

848-955-01

[illegible]

J.S. Young  
Joe A. Curtis  
Jeffy Wilson

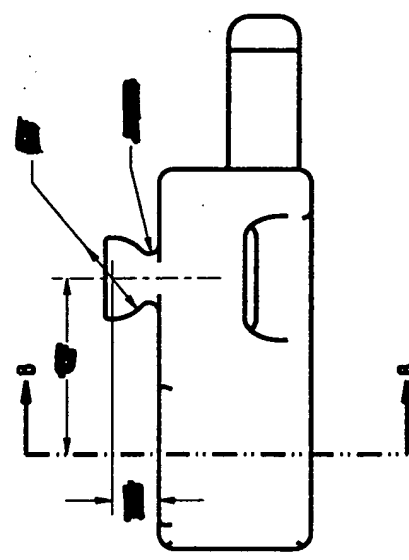
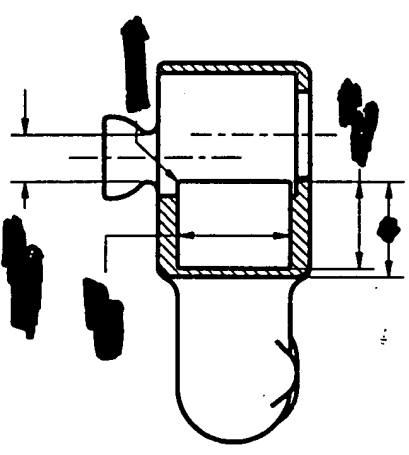
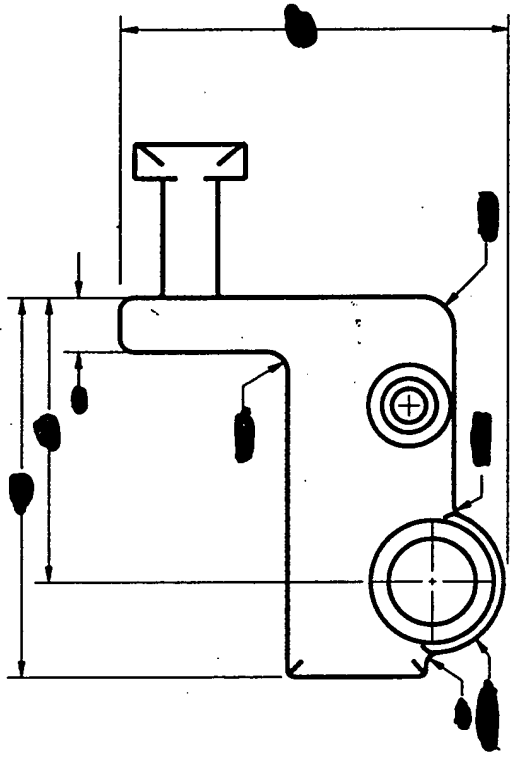


00142  
P# 70814

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE		JST

848-955-02



SECTION 8-8

<p>Information contained in this document is considered proprietary by Medtronic Sofamor Danek. Release other than to persons for which it is required in performance of their work for Medtronic Sofamor Danek is not authorized.</p>		<p>TOLERANCE UNLESS SPECIFIED MILLIMETERS ±0.1 ANGLES ±0.5°</p>	<p>THIRD ANGLE PROJECTION</p>	<p>CONTOURS OF THIS DRAWING ARE BASED ON THE MEDTRONIC SOFAMOR DANEK INTERPRETATION OF USE 1115-194</p>	<p><b>Medtronic</b> <b>SOFAMOR DANEK</b> MEDTRONIC SOFAMOR DANEK MANUFACTURING 1100 PLYMOUTH PLACE, BETHESDA, MD 20814 U.S.A. TEL: 301-346-3113 FAX: 301-346-1315</p>	<p>DATE APPROVED DATE SCALE NTS</p>	<p>CD HORIZON ECLIPSE LOCKING DISTRACTOR BODY</p>	<p>848-955-02</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	---------------------------------------------------------------------------------	-------------------------------	---------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------	-------------------------------------------------------	-------------------

J.S. Young  
Joe A. Curt  
Jeff W. [unclear]

00142  
Pg. 8 of 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

REV DESCRIPTION		DATE BY	848-955-02	
A	INITIAL RELEASE		JST	

SECTION D-D

SECTION A-A

SECTION C-C

<p><b>Medtronic</b> <b>SOFAMOR DANEK</b></p> <p>NEOTRONIC SOFAMOR DANEK MANUFACTURING 1100 PULASKI PLACE, MEMPHIS TN 38103 U.S.A. TEL: 901-266-3133 FAX: 901-266-1535</p>		<p>CD HORIZON ECLIPSE</p> <p>LOCKING DISTRACTOR BODY</p> <p>848-955-02</p> <p>NTS</p>	
<p>THIRD ANGLE PROJECTION</p> <p>CONTENTS OF THIS DRAWING ARE BASED ON THE MEDTRONIC SOFAMOR DANEK MANUFACTURING</p>		<p>DATE</p> <p>APPROVED</p> <p>DATE</p> <p>DATE</p>	

1. DO NOT SCALE DRAWING  
2. REMOVE ALL DIMENSIONS AND  
3. 1/8" / 100mm UNLESS NOTED

INFORMATION CONTAINED IN THIS DRAWING IS THE PROPERTY OF MEDTRONIC SOFAMOR DANEK. IT IS TO BE USED FOR THE PERFORMANCE OF THEIR WORK FOR MEDTRONIC SOFAMOR DANEK IS NOT AUTHORIZED.

J.S. Young  
Joe D. Custer  
Jeffrey W. Ba

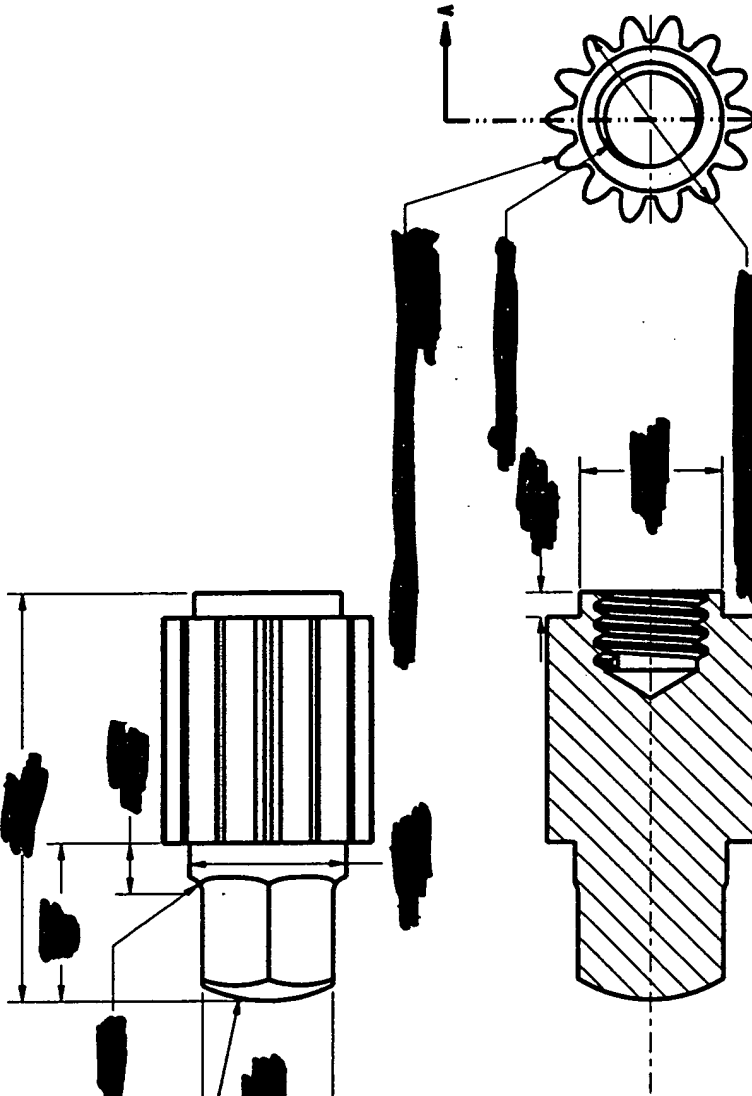


00142  
 18-10-0614

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE		JSY

848-950-03-01



SECTION A-A

CD HORIZON ECLIPSE		848-950-03		848-950-03-01		848-950-03	
COMPRESSOR PINION		MATERIAL		FINISH		SCALE	
DATE		DATE		DATE		DATE	
APPROVED		APPROVED		APPROVED		APPROVED	
DATE		DATE		DATE		DATE	
DATE		DATE		DATE		DATE	
DATE		DATE		DATE		DATE	



**Medtronic**  
**SOFAMOR DANEK**  
 MEDTRONIC SOFAMOR DANEK  
 1000 PLYMOUTH PLACE, MINNETONKA, MN 55345-0001  
 TEL: 763-551-3000 FAX: 763-551-3001

<p>1. DO NOT SCALE DRAWING</p> <p>2. SHARP CORNERS 0.5 MIN.</p> <p>3. 0.5 FINISH UNLESS NOTED</p>	<p>1. DO NOT SCALE DRAWING</p> <p>2. SHARP CORNERS 0.5 MIN.</p> <p>3. 0.5 FINISH UNLESS NOTED</p>
---------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------

*Handwritten signatures and initials:*  
 J.S. Young  
 J.A. Carter  
 J. [unclear]

ERF002 REV A 01/01/01

00142  
PS-11 0814

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
REV DESCRIPTION															
A INITIAL RELEASE															
DATE BY															
[REDACTED] JSY															
848-950-03-02															

INFORMATION CONTAINED IN THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY MEDTRONIC SOFAMOR DANEK. RELEASE UNDER E.O. 13526.		TOLERANCE UNLESS SPECIFIED IN MILLIMETERS $\pm 0.1$ ANGLES $\pm 1^\circ$		TARGETS OF THIS DRAWING ARE BASED ON THE MEDTRONIC SOFAMOR DANEK INTERPRETATION OF THE TITLE.	
1. DO NOT SCALE DRAWING FOR DIMENSIONS. 2. EXCEPT FOR DIMENSIONS AND TOLERANCES, ALL DIMENSIONS AND TOLERANCES ARE IN MILLIMETERS.		TARGETS OF THIS DRAWING ARE BASED ON THE MEDTRONIC SOFAMOR DANEK INTERPRETATION OF THE TITLE.		1. DO NOT SCALE DRAWING FOR DIMENSIONS. 2. EXCEPT FOR DIMENSIONS AND TOLERANCES, ALL DIMENSIONS AND TOLERANCES ARE IN MILLIMETERS.	

**Medtronic**  
**SOFAMOR DANEK**

MEDTRONIC SOFAMOR DANEK MANUFACTURING  
1800 VICTORY PLACE, MEMPHIS TN 38103 U.S.A.  
TEL: 901-398-3133 FAX: 901-398-1535

DATE BY	DATE BY	DATE BY	DATE BY
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
DATE BY	DATE BY	DATE BY	DATE BY
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

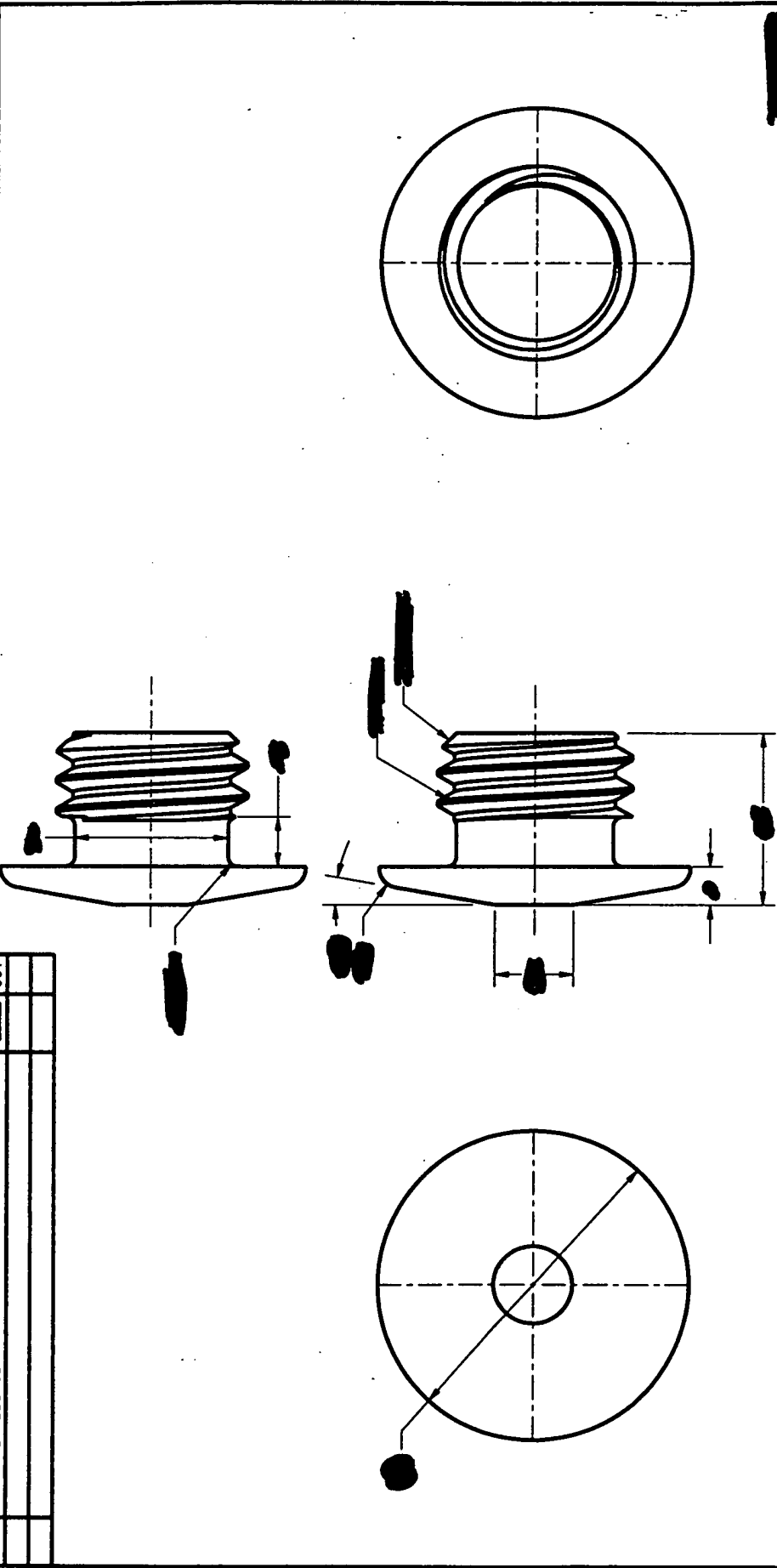
848-950-03-02	848-950	CD HORIZON ECLIPSE
PINION WASHER		
848-950-03-02	848-950-03-02	848-950-03-02

J.S. Young  
Joe A. Curtis  
[Signature]

00142  
PF-12 0614

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE		JSY



PART NO. 848-950-04		PART NAME CD HORIZON ECLIPSE	
ITEM DESCRIPTION 848-950-04		COMPRESSOR PINION RETAINING SCREW	
DATE	DATE	DATE	DATE
APPROVED	APPROVED	APPROVED	APPROVED
SIGNED	SIGNED	SIGNED	SIGNED
PART NO. 848-950-04		PART NAME CD HORIZON ECLIPSE	



**Medtronic**  
**SOFAMOR DANEK**  
MEDTRONIC SOFAMOR DANEK MANUFACTURING  
1000 PLEASANT PLACE, WILLY, U.S.A. 2940 U.S.A.  
TEL: 214-341-1235 FAX: 214-341-1232



THIRD ANGLE PROJECTION  
CONTENTS OF THIS DRAWING ARE BASED  
ON THE MEDTRONIC SOFAMOR DANEK  
INTERPRETATION OF THE 114.30-114

TOLERANCE UNLESS SPECIFIED  
MILLIMETERS  
±0.1  
ANGLES  
1. DO NOT SCALE DRAWING  
2. REMOVE ALL DIMENSIONS AND  
3. 0.01/10TH UNLESS NOTED

INFORMATION CONTAINED IN THIS  
DRAWING IS UNCLASSIFIED  
EXCEPT WHERE SHOWN  
OTHERWISE. IT IS THE POLICY  
OF MEDTRONIC SOFAMOR DANEK  
TO MAKE IT AVAILABLE TO THE  
PUBLIC. NO PART OF THIS  
DRAWING IS TO BE REPRODUCED  
OR TRANSMITTED IN ANY FORM  
OR BY ANY MEANS, ELECTRONIC  
OR MECHANICAL, INCLUDING  
PHOTOGRAPHING, RECORDING,  
OR BY ANY INFORMATION  
SYSTEM, WITHOUT PERMISSION  
IN WRITING FROM MEDTRONIC  
SOFAMOR DANEK.

*Joe A. Carter*

*J.S. Young*

*Jeffery W. Lee*



